Remarks:

A. The specification was objected to because of the following informalities: On page 8 line 5 insert --of-- after "by means". The examiner stated the appropriate correction was required.

Applicant amended the specification paragraph 8 line 5 to insert --of-- after "by means." It is believed that this specification amendment does not add new matter to this application.

B. The drawings were objected to under 37 CFR 1.83(a) by the examiner stating the drawings must show every feature of the invention specified in the claims. Therefore, the threaded rod, threaded tube, and "first end of pneumatic bag line being pneumatically connected to threaded tube" in claim 4 must be shown or the features canceled from the claim(s).

The specification has been amended to show the reference numbers 21, 23, and 25. The threaded rod **21**, the threaded tube **23**, and the first end of the pneumatic bag line being pneumatically connected **25** to the threaded tube **23** are now depicted. The attached replacement drawing sheet includes changes to FIG. 2. The attached replacement drawing sheet, FIG. 2, replaces the original sheet FIG. 2. In FIG. 2, previous reference number 5 is clarified and reference numbers 21, 23, and 25 have been added to correspond with the specification description. The threads on the threaded tube described in the specification are depicted. An annotated marked up drawing is provided. It is believed that neither these specification amendments nor the drawing replacement sheet add new matter to this application.

C. Claim 4 was objected to because of the following informalities: on line 2, "vehicle with" should be --vehicle to--.

Applicant amended Claim 4 line 2 to delete "with a vehicle". The claim was described in the summary on page 3 line 23 without the phrase "with a vehicle". It is believed that this claim amendment corrects the examiner's objection and does not add new matter to this application.

D. The examiner rejected Claim 4 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 was rejected because the

examiner stated: "it is unclear whether the pneumatic suspension apparatus and vehicle frame is being claimed or merely the subcombination of the pneumatic suspension apparatus. Claim 4 recites the vehicle frame in a functional statement in the preamble of the claim, indicating the subcombination is being claimed, yet the applicant recites a further structural limitation to the vehicle frame in line 12, indicating the combination is being claimed. For purposes of this Office action, the examiner assumed the subcombination is being claimed."

Applicant amended Claim 4 line 2 to delete "with a vehicle" and line 8 to delete "for being", and line 12 to delete "further bolted" and added "for being attached. Claim 4 was stated in the summary on page 3 line 23 without the phrase "with a vehicle". Claim 4 line 8 "for being" is deleted for clarity. In Claim 4 line 12 "further bolted" is replaced with "for being attached" to clarify that the vehicle frame is not being claimed. Claim 4 line 14 "in the lower portion of the pneumatic bag" is added after "threaded tube" for clarity. As there is currently only one interpretation to Claim 4, Applicant submits that Claim 4 does comply with 35 U.S.C. 112, second paragraph and request that the examiner withdraw this rejection. It is believed that this claim amendment does not add new matter to this application.

E. The examiner rejected Claims 1 and 3 under 35 U.S.C. 102(b) as anticipated by U.S. Patent 4,198,025 to Lowe et al. (Lowe). The examiner stated regarding claims 1 and 3, "Lowe discloses a pneumatic suspension apparatus comprising: at least one pneumatic bag (15) attachable between a vehicle frame (11) and vehicle seat (10) for dampening vibrations between the frame and seat; a bag pneumatic line (17a) comprising a first end pneumatically connected to the pneumatic bag and a second end pneumatically connected to a regulator (18, 20) which adjusts the pneumatic pressure of the at least one pneumatic bag (15); a reservoir pneumatic line (19a) having a first end pneumatically connected to the pneumatic bag and a second end pneumatically connected to a reservoir (19) which supplies inflation of the at least one pneumatic bag (15); an upper mounting plate (upper horizontal portion of 16) attachable between the vehicle seat (10) and at least one pneumatic bag; and a lower plate (17) attachable between the at least one pneumatic bag and vehicle frame (11)."

The examiner rejected Claims 1 and 3 under 35 U.S.C. 102(b) as anticipated by U.S. Patent 4,198,025 to Lowe et al. (Lowe). The examiner stated regarding claims 1 and 3, "Lowe discloses a pneumatic suspension apparatus comprising: at least one pneumatic bag (15) attachable between a vehicle frame (11) and vehicle seat (10) for dampening vibrations between the frame and seat; a bag pneumatic line (17a) comprising a first end pneumatically connected to the pneumatic bag and a second end pneumatically connected to a regulator (18, 20) which adjusts the pneumatic pressure of the at least one pneumatic bag (15); a reservoir pneumatic line (19a) having a first end pneumatically connected to the pneumatic bag and a second end pneumatically connected to a reservoir (19) which supplies inflation of the at least one pneumatic bag (15); an upper mounting plate (upper horizontal portion of 16) attachable between the vehicle seat (10) and at least one pneumatic bag; and a lower plate (17) attachable between the at least one pneumatic bag and vehicle frame (11)." Claim 1 is amended to read "wherein the at least one pneumatic bag restricts the vehicle seat laterally and dampens the vibrations between the vehicle frame and the vehicle seat". This amendment clarifies what is implied in the drawings and in the specification where the at least one pneumatic bag is used to maintain the lateral position of the vehicle seat as well as dampen the vibrations between the vehicle frame and the vehicle seat.

Vs. Lowe (4,198,025):

The spring suspension and the complex regulator and ride control circuitry of Lowe ('025) are designed to maintain a desired vertical height for the seat and rider. As described in column 2 lines 42 through 65 and in FIGS. 1 and 2, Lowe ('025) teaches a seat support on which the seat part 10 is mounted, two pairs of scissor arms 14 located in laterally-spaced vertical planes, one arm of each pair having a pivotal connection 14a at one end to the seat support and a sliding or rolling connection 14b at the other end to the base part 11, the other arm of each pair having a pivotal connection 14c to the base part 11 and a sliding or rolling connection 14d to the seat support. The arms 14 are pivotally interconnected at their intersection at 14e. This system of pivoted linkages maintains the seat part horizontal as it rises and falls relative to the base part. In addition, the air spring 15 is connected between the base part 11 and the seat support 13, the air spring consisting of a tubular rubber envelope 15a the ends of which have been folded inwardly and each secured around the rim of upper and lower support members 16, 17 fixed respectively to the seat support 13 and the base part 11. The upper member 16 is cup-shaped, the outer surface of member 16 providing a support for the rolling lobe of the tubular envelope 15a as the seat support rises and falls. *Lowe ('025) does not disclose a pneumatic bag that will restrict the vehicle seat laterally or horizontally. Lowe ('025) requires a system of* *pivoted linkages* comprising two pairs of scissor arms located in laterally-spaced vertical planes, one arm of each pair having a pivotal connection at one end to the seat support and a sliding or rolling connection at the other end to the base part, the other arm of each pair having a pivotal connection to the base part and a sliding or rolling connection to the seat support to maintain the seat part horizontal as it rises and falls relative to the base part *to restrict the vehicle seat laterally or horizontally.* The description of Lowe ('025) above compared with the present invention demonstrates the usefulness and novelty of *the present invention* by using a pneumatic bag that *restricts the lateral movement of the vehicle seat without the system of pivoted linkages of Lowe ('025).* This allows the pneumatic suspension apparatus to be manufactured simpler, less expensive and the apparatus operation is less complex and requires less maintenance.

The regulator for *Lowe ('025)* is described in column 3 line 43 through column 9 line 57. This *regulator is an automatic ride control circuit* comprising the solenoids L1 and L2 of the air spring solenoid valves 18 and 20. The regulator of Lowe ('025) is adjusted or *controlled by a position-responsive device 21* that includes a potentiometer sensing the height of the seat. The solenoid L1 or L2 is pulsatingly energized thus either admitting air to or releasing air from, the air spring to restore the seat to its mid-ride position. The *regulator of Lowe ('025) does not have the capability to adjust for the type of ride desired whether stiffer or softer.* The regulator of Lowe ('025) is a different element than the regulator described in the specification of the present invention. *The present invention regulator describes a regulator that has a conventional means for selecting the adjustment of the pneumatic pressure* for the pneumatic bag. Typically, this is an adjustable knob. The pneumatic pressure in the pneumatic bags can be adjusted while the vehicle is on the move. If the pneumatic pressure within the pneumatic bag is increased, *the ride will be stiffer.* If the pneumatic pressure within the pneumatic bag is decreased, *the ride will be softer. The present invention pneumatic bag as well as the regulator are different from the elements of Lowe ('025).*

Lowe ('025) should not be used here as a basis for an anticipation rejection of Claims 1 and 3. Applicant submits that Claims 1 and 3 do comply with 35 U.S.C. 102(b) and request that the examiner withdraw this rejection.

F. Claim Rejections - 35 USC § 103: Claims 2 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe. The examiner stated regarding claims 2 and 5, Lowe discloses the pneumatic suspension apparatus as applied above, and further teaches a compressor pneumatically connected to and pressurizing the reservoir (col. 2, lines 66 ff.). Lowe does not expressly teach a compressor pneumatic line having a first end connected with the compressor and a second end connected with the reservoir. However, the examiner asserted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pneumatic suspension apparatus to include a compressor pneumatic line connecting the compressor and reservoir because one would have been motivated to provide a means for pneumatically interconnecting the compressor and the reservoir as is well known in the art.

The examiner further stated "Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,682,431 to Vivian in view of Lowe. Regarding claims 1-5, Vivian discloses a pneumatic suspension apparatus comprising: at least one pneumatic bag (9) attachable between a vehicle frame (4) and vehicle seat (2) for dampening vibrations between the frame and seat; a bag pneumatic line (15) comprising a first end pneumatically connected to the pneumatic bag and a second end pneumatically connected to a regulator (11, 12) which adjusts the pneumatic pressure of the at least one pneumatic bag (9); a compressor (col. 3, lines 10-12) pneumatically connected to the pneumatic bag by a compressor pneumatic line (14) having a first end pneumatically connected to the compressor and a second end pneumatically connected to the pneumatic bag; an upper mounting plate (7) attachable between the vehicle seat (2) and at least one pneumatic bag; a lower plate (3) attachable between the at least one pneumatic bag and vehicle frame (4); wherein the upper mounting plate is attached to the pneumatic bag by a threaded rod (inherently suggested by col. 2, lines 55-60) in the upper portion of the pneumatic bag that inherently extends through an aperture in the upper mounting plate and is secured thereto by a nut (cap screws); and a threaded tube in the lower portion of the pneumatic bag (9) inherently passing through an aperture in the lower mounting plate (see Fig. 5) and including a threaded nut (see Fig. 5) securing the pneumatic bag to the lower plate and pneumatic bag line (15). Vivian does not teach the pneumatic suspension apparatus including a reservoir and reservoir pneumatic line. Lowe discloses the pneumatic suspension apparatus as applied to claims 1, 2, 3, and 5 above. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pneumatic suspension apparatus of Vivian to include a reservoir and reservoir pneumatic line connected to the pneumatic bag and compressor because one would have been motivated to provide a means for storing the compressed air from the compressor as inherently taught by Lowe."

The examiner rejected Claims 2 and 5 under 35 U.S.C. 103(a) as being unpatentable over Lowe. The examiner stated regarding claims 2 and 5, Lowe discloses the pneumatic suspension apparatus as applied above, and further teaches a compressor pneumatically connected to and pressurizing the reservoir (col. 2, lines 66 ff.). Lowe does not expressly teach a compressor pneumatic line having a first end connected with the compressor and a second end connected with the reservoir. However, the examiner asserted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pneumatic suspension apparatus to include a compressor pneumatic line connecting the compressor and reservoir because one would have been motivated to provide a means for pneumatically interconnecting the compressor and the reservoir as is well known in the art.

Claim 1, from which Claim 2 depends, and Claim 5 are amended to read "wherein the at least one pneumatic bag restricts the vehicle seat laterally and dampens the vibrations between the vehicle frame and the vehicle seat". This amendment clarifies what is implied in the drawings and in the specification where the at least one pneumatic bag is used to maintain the lateral position of the vehicle seat as well as dampen the vibrations between the vehicle frame and the vehicle seat. Even if it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pneumatic suspension apparatus to include a compressor pneumatic line connecting the compressor and reservoir, the differences in the pneumatic bag and the regulator would not be obvious. The spring suspension and complex regulator and ride control circuitry of Lowe ('025) are designed to maintain a desired vertical height for the seat and rider. As described in column 2 lines 42 through 65 and in FIGS. 1 and 2, *Lowe ('025) teaches* a seat support on which the seat part 10 is mounted, two pairs of scissor arms 14 located in laterally-spaced vertical planes, one arm of each pair having a pivotal connection 14a at one end to the seat support and a sliding or rolling connection 14b at the other end to the base part 11, the other arm of each pair having a pivotal connection 14c to the base part 11 and a sliding or rolling connection 14d to the seat support. The arms 14 are pivotally interconnected at their intersection at 14e. This *system of pivoted linkages maintains the seat part horizontal as it rises and falls relative to the base part.* In addition, the air spring 15 is connected between the base part 11 and the seat support 13, the air spring consisting of a tubular rubber envelope 15a the ends of which have been folded inwardly and each secured around the rim of upper and lower support members 16, 17 fixed respectively to the seat support 13 and the base part 11. The upper member 16 is cup-shaped, the outer surface of member 16 providing a support for the rolling lobe of the tubular envelope 15a as the seat support rises and falls. *Lowe ('025) does not disclose a pneumatic bag that will restrict the vehicle seat laterally or horizontally.* Lowe ('025) requires a system of pivoted linkages comprising two pairs of scissor arms located in laterally-spaced vertical planes, one arm of each pair having a pivotal connection at one end to the seat support and a sliding or rolling connection at the other end to the base part, the other arm of each pair having a pivotal connection to the base part and a sliding or rolling connection to the seat support to maintain the seat part horizontal as it rises and falls relative to the base part to restrict the vehicle seat laterally or horizontally. The description of Lowe ('025) above compared with the present invention demonstrates the usefulness and novelty of the present invention by using a pneumatic bag that restricts the lateral movement of the vehicle seat. This allows the pneumatic suspension apparatus to be manufactured simpler, less expensive and the apparatus operation is less complex and requires less maintenance. The regulator for Lowe ('025) is described in column 3 line 43 through column 9 line 57. This regulator is an automatic ride control circuit comprising the solenoids L1 and L2 of the air spring solenoid valves 18 and 20. The *regulator of Lowe ('025) is adjusted or controlled by a position-responsive device 21* that includes a potentiometer sensing the height of the seat. The solenoid L1 or L2 is pulsatingly energized thus either admitting air to or releasing air from, the air spring to restore the seat to its mid-ride position. The *regulator of Lowe ('025) does not have the capability to adjust for the type of ride desired whether stiffer or softer.* The regulator of Lowe ('025) is a very different element than described in the specification of the *present invention that describes a regulator that has a conventional means for selecting the adjustment of the pneumatic pressure for the pneumatic bag to adjust for the type of ride desired whether stiffer or softer.* The present invention comprises different elements than Lowe ('025) and omits elements of the Lowe ('025) and simplifies the restriction of the lateral motion of the vehicle seat and the dampening of the vibrations between the vehicle frame and the vehicle seat without the loss of capability. Lowe ('025) lacks any suggestion that the reference should be modified in a manner required to meet the claims of the present invention. MPEP 2142 states that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Lowe ('025) should not be used here as a basis for an obviousness rejection of Claim 2 and 5.

The examiner further stated "Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,682,431 to Vivian in view of Lowe. Regarding claims 1-5, the examiner stated that Vivian discloses a pneumatic suspension apparatus comprising: at least one pneumatic bag (9) attachable between a vehicle frame (4) and vehicle seat (2) for dampening vibrations between the frame and seat; a bag pneumatic line (15) comprising a first end pneumatically connected to the pneumatic bag and a second end pneumatically connected to a regulator (11, 12) which adjusts the pneumatic pressure of the at least one pneumatic bag (9); a compressor (col. 3, lines 10-12) pneumatically connected to the pneumatic bag by a compressor pneumatic line (14) having a first end pneumatically connected to the compressor and a second end pneumatically connected to the pneumatic bag; an upper mounting plate (7) attachable between the vehicle seat (2) and at least one pneumatic bag; a lower plate (3) attachable between the at least one pneumatic bag and vehicle frame (4); wherein the upper mounting plate is attached to the pneumatic bag by a threaded rod (inherently suggested by col. 2, lines 55-60) in the upper portion of the pneumatic bag that inherently extends through an aperture in the upper mounting plate and is secured thereto by a nut (cap screws); and a threaded tube in the lower portion of the pneumatic bag (9) inherently passing through an aperture in the lower mounting plate (see Fig. 5) and including a threaded nut (see Fig. 5) securing the pneumatic bag to the lower plate and pneumatic bag line (15). Vivian does not teach the pneumatic suspension apparatus including a reservoir and reservoir pneumatic line. Lowe discloses the pneumatic suspension apparatus as applied to claims 1, 2, 3, and 5 above. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pneumatic suspension apparatus of Vivian to include a reservoir and reservoir pneumatic line connected to the pneumatic bag and compressor because one would have been motivated to provide a means for storing the compressed air from the compressor as inherently taught by Lowe."

Claim 1 and Claim 5 are amended to read "wherein the at least one pneumatic bag restricts the vehicle seat laterally and dampens the vibrations between the vehicle frame and the vehicle seat". This amendment clarifies what is implied in the drawings and in the specification where the at least one pneumatic bag is used to maintain the lateral position of the vehicle seat as well as dampen the vibrations between the vehicle frame and the vehicle seat. The inflatable resilient member described in Vivian ('431) is a different element than the pneumatic bag described in the present invention which restricts the lateral movement. The Vivian ('431) suspension system is designed for heavy vehicles, such as cross-country trucks, tractors for trailer units, earth moving vehicles, including shovels, hauling carriers, bulldozers, and other on and off the road equipment. The present invention is designed for vehicles including motorcycles, lawn tractors, boats, fork life trucks, soap box racers, and all terrain vehicles. *Vivian ('431) teaches an inflatable resilient member permitting relative vertical movement between the mobile vehicle and the seat and having vertical guides which restrain relative lateral movement between the seat and vehicle.* In Vivian ('431) the base or support plate 3 is suitable secured to a floor structure 4. The base or support plate 3 has a plurality of spaced guides 5 extending upwardly therefrom to cooperatively engage a like plurality of guides 6 depending from a mounting plate or seat member 7 having the vehicle's seat 2 mounted thereon. The guides 5 and the posts 6 permit relative pneumatically cushioned generally vertical movement between the seat 2 and the floor structure 4. Vivian ('431) states it is desirable to restrain relative lateral movement therebetween, therefore, a sleeve bearing 8 is positioned within each of the guides 5 and is engageable by the respective post 6 received therein. This illustrates that the inflatable resilient member of Vivian ('431) does not restrict the lateral movement of the pneumatic suspension as with the present invention pneumatic bag. Therefore, Vivian ('431) must use the elaborate device described above consisting of guides, posts, and other elements to accomplish the lateral restriction of the pneumatic bag of the current invention. This is yet another example of the novel combination of the present invention where a pneumatic bag, standard or custom air bellows, in communication with a regulator and a supply of pneumatic pressure with the pneumatic bag mounted between a vehicle seat and a vehicle frame that produces a new desired result of smoother riding and less vibration with smaller vehicles simpler and more efficient. *Both Vivian ('431) and Lowe ('025) teach that additional structure is needed to restrict lateral movement and that the pneumatic bag does not restrict the lateral or horizontal movement.* Therefore, *both Vivian ('431) and Lowe ('025) references teach away from the present invention.* With regard to the proposed combination of Vivian ('431) and Lowe ('025), it is well known that in order for any prior-art references themselves to be validly combined for use in a prior-art Section 103 rejection, the references themselves (or some other prior art) must suggest that they combine. E.g. as is stated in MPEP 2143.01 from In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination." Neither Lowe ('025) nor Vivian ('431) contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. *Even if the references were combined modifications, not taught in the prior art, would be necessary as they both teach using mechanical structure for lateral restriction whereas the present invention teaches using the pneumatic bag for lateral support.* Neither Lowe ('025) nor Vivian ('431) in view of Lowe ('025) should be used here as a basis for an obvious rejection of Claim 1 through 5.

Therefore, Applicant submits that Claims 2 and 5 are allowable over Lowe ('025) and that Claims 1-5 are allowable over Vivian ('431) in view of Lowe ('025) and solicits reconsideration and allowance.

Inasmuch as this application, as amended, contains five claims and no more than two independent claims, it is believed that there are no additional fees due at this time. In the event the undersigned is mistaken, Applicant requests that Examiner call the undersigned at the phone number below.

In view of the foregoing, it is respectfully submitted that now pending claims 1 through 5 are in allowable condition. Accordingly, early allowance and issuance of this application is respectfully requested.

To expedite this application in the event the Examiner wishes to discuss any aspect of this response, please contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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Certificate of Facsimile Transmission: I certify that on the date below I will fax this paper (including appendix) to GAU 3632 of the U.S. Patent and Trademark Office at 703-872-9306.

2005 Feb. 23

James Addison Barry Jr

Amendments to the Drawings:

The attached replacement drawing sheet includes changes to FIG. 2. The attached replacement drawing sheet FIG. 2 replaces the original sheet FIG. 2. In FIG. 2, previous reference number 5 is clarified and reference numbers 21, 23 and 25 have been added to correspond with the specification description. The threads on the threaded tube described in the specification are depicted. The connection between reference number 5 and reference number 23 has also been clarified to correspond with the specification description. An annotated marked up drawing is provided. It is believed that these drawing amendments do not add new matter to this application.

Annotated Marked Up Drawing

Pneumatic Suspension Apparatus for a Vehicle Seat
NA-01

2/5

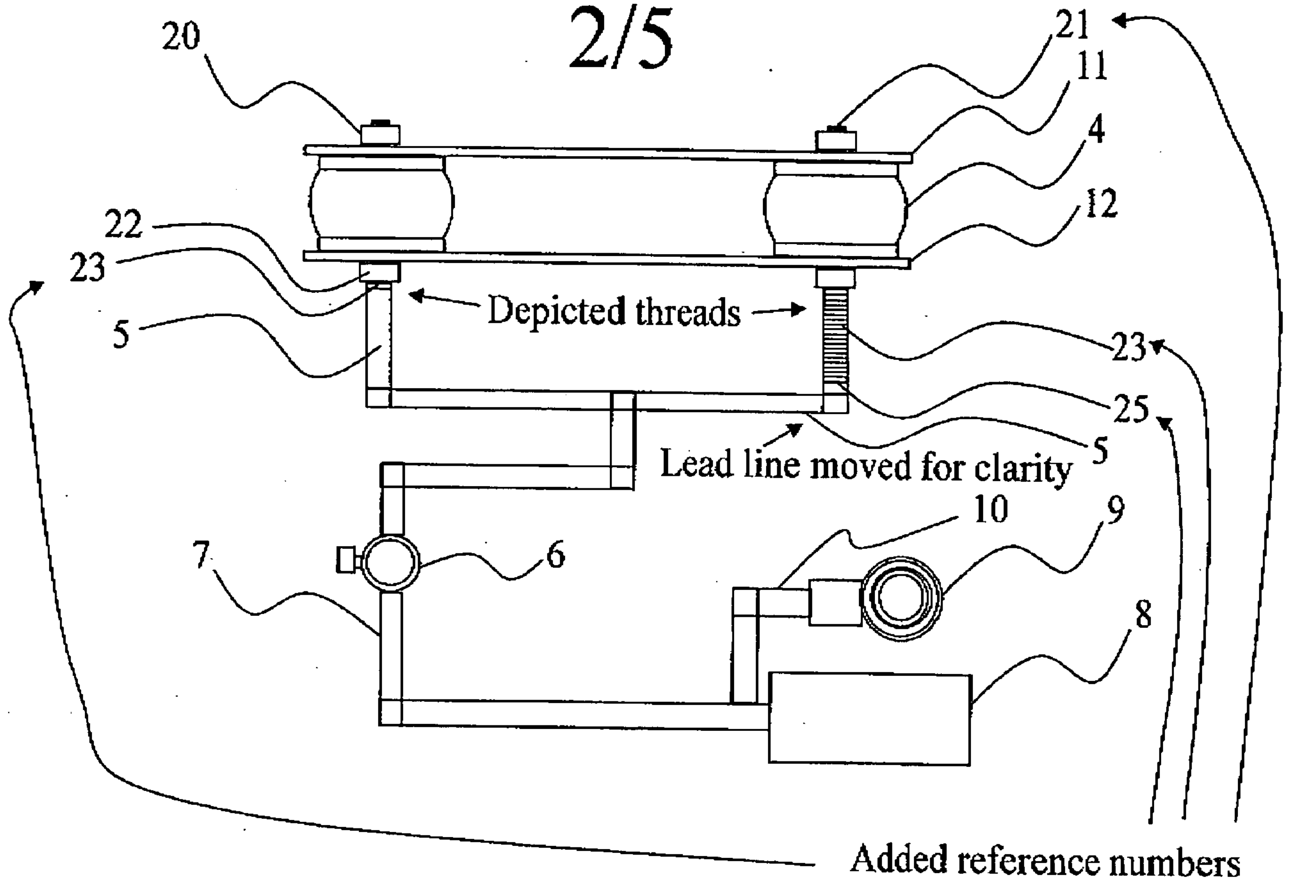

FIG. 2